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(71) Applicants (for all designated States except US): **GLAXOSMITHKLINE BIOLOGICALS S.A.** [BE/BE]; Rue de l'Institut 89, B-1330 Rixensart (BE). **UTRECHT UNIVERSITY** [NL/NL]; Padualaan 8, NL-3584 CH Utrecht (NL).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **BOS, Martine, Petronella** [NL/NL]; Utrecht University, Padualaan 8, NL-3584 CH Utrecht (NL). **POOLMAN, Jan** [NL/BE]; GlaxoSmithKline Biologicals S.A., Rue de l'Institut 89, B-1330 Rixensart (BE). **TEFSEN, Boris** [NL/NL]; Utrecht University, Padualaan 8, NL-3584 CH Utrecht (NL). **TOMMASSEN, Johannes, Petrus, Maria** [NL/NL]; Utrecht University, Padualaan 8, NL-3584 CH Utrecht (NL).

(74) Agent: **LUBIENSKI, Michael, John**; GlaxoSmithKline, Corporate Intellectual Property (CN925.1), 980 Great West Road, Brentford, Middlesex TW8 9GS (GB).

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(54) Title: VACCINE

(57) Abstract: The present invention discloses a Gram negative bacterium in which the expression of a protein involved in LPS transport to the outer membrane is functionally downregulated such that the level of LPS in the outer membrane is decreased compared to a wild-type Gram negative bacterium. Down regulation of Imp and MsbA proteins can result in such a bacterium. Outer membrane vesicle preparations derived from the Gram negative bacterium of the invention can be used in vaccines to provide protection against bacterial infection.

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